

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. APPLN. NO. 09/509,298  
ATTORNEY DOCKET NO. Q58185

**REMARKS**

Claims 1-14 were examined on their merits.

Applicant herein amends claims 1, 3, 7 and 8. The amendments to claims 1 and 3 are made to more clearly define that non-deterministic communications traffic is assigned to unused time slots. The amendments to claims 7 and 8 correct a dependency error. The amendments to claims 1, 3, 7 and 8 do not add any new matter, and do not raise any new issues requiring further search or consideration by the Examiner. Entry and consideration of the claim amendments is respectfully requested.

Claims 1-14 are all the claims presently pending in the application.

1. Claims 1-14 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Swales (U.S. Patent No. 6,321,272). Applicant traverses the rejection of claims 1-14 at least for the reasons set forth below.

The initial burden of establishing that a claimed invention is *prima facie* obvious rests on the USPTO. *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). To make its *prima facie* case of obviousness, the USPTO must satisfy three requirements:

1. The prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated to artisan to modify a reference or to combine references. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988).
2. The proposed modification of the prior art must have had a reasonable expectation of

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success, and that determined from the vantage point of the artisan at the time the invention was made. *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209 (Fed. Cir. 1991).

3. The prior art reference or combination of references must teach or suggest all the limitations of the claims. *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991); *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).

The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, the nature of a problem to be solved. *In re Dembiczaik*, 175 F.3d 994, 999 (Fed. Cir. 1999). Alternatively, the motivation may be implicit from the prior art as a whole, rather than expressly stated. *Id.* Regardless if the USPTO relies on an express or an implicit showing of motivation, the USPTO is obligated to provide particular findings related to its conclusion, and those findings must be clear and particular. *Id.* A broad conclusionary statement, standing alone without support, is not “evidence.” *Id.*; *see also, In re Zurko*, 258 F.3d 1379, 1386 (Fed. Cir. 2001).

In addition, a rejection cannot be predicated on the mere identification of individual components of claimed limitations. *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000). Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *Id.*

Swales discloses, *inter alia*, a proxy server that is configured to control the message forwarding rate between the non-real-time to the real-time portion of a deterministic network.

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Specifically, Swales discloses a Web server module (30) acting as a gateway between the real time portion of the system (which may be limited to a single PLC (32) or may comprise a local network (112) connecting several devices) and the non-real-time portion of the system, built around an “uncontrolled network” (130), which may be an Ethernet network, an Intranet or the Internet. Due to its buffers and its software mechanisms, this gateway (30) acts as a traffic regulator or “throttle” which “distillates” the frames and lets them into the real-time portion of the network when conditions are met so that they do not disturb real-time traffic. Swales further discloses maintaining the loading of the real-time portion of the network stable, regardless of communication demands imposed by external non-real-time communications. Communications with traffic loadings cannot be so controlled must pass through the proxy device in order to gain access to the deterministic network, and the proxy device introduces deliberate delays to messages if it is necessary for the enforcement of traffic budget limits. *See Abstract; col. 2, lines 52-60; col. 3, lines 1-6; col. 10, lines 25-41* of Swales. The main drawback of Swales is that all equipment, data and exchanges of data have to be preconfigured in the “throttle” for the system of Swales to operate. *See col. 2, lines 61-64; col. 13, lines 34-37* of Swales. Although Applicant recites a gateway in claim 2, Applicant’s gateway computer connected between a local computer and the Internet is transparent and is only used for routing IP frames sent by the local embedded server.

The Examiner acknowledges that Swales does not specifically mention the use of time slots. *See May 28, 2003 Final Office Action, pg. 2.* The Examiner alleges that Swales discloses limiting communication between devices to defined time periods. *Id.* The Examiner further alleges that it would have been obvious for one of skill in the art to modify Swales to use the unused time slots of

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deterministic communications so as to allow real-time controls to timely executed. *See* May 28, 2003 Final Office Action, pgs. 2-3..

Contrary to the Examiner's assertion, Swales fails to teach or suggest an architecture that uses embedded local servers and time slots left available by the deterministic traffic of the industrial local area network for responding to non-deterministic requests without disturbing priority message traffic related to real time process control, as recited in claim 1. The Examiner is confusing the *intentional* slowing of rate of the non-priority communications traffic in Swales with the assignment of unused time slots for non-deterministic requests, as recited in claim 1. The heart of Swales' invention is a traffic controlling proxy device, and Swales clearly states that its "...primary function is to provide data flow control by restricting unnecessary communication traffic from the real time portion *by controlling the rate* at which messages are forwarded from the non-real time to the real time portions." *See* col. 10, lines 32-36 of Swales (*emphasis added*). As acknowledged by the Examiner, Swales makes no attempt to assign non-priority communications traffic to unused time slots, but instead the rate at which non-priority communications traffic obtains entry into the network. *See*, e.g., col. 2, lines 52-56; col. 13, lines 34-60 of Swales. In contrast, the invention recited in claim 1 handles non-deterministic requests by assigned unused time slots to the non-deterministic requests. Thus, the non-deterministic requests enter the network based upon the availability of unused time slots, instead of at a preordained rate. Moreover, in response to the Examiner's argument that Swales allegedly discloses limiting non-priority communications traffic to certain time periods, Applicant notes that the Examiner did not cite any portion of Swales' disclosure that discusses such limitations. Furthermore, as discussed above, Swales limits non-

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priority communications traffic on the basis of messaging rates, and not on the basis of specific times for access. Applicant believes that the Examiner cannot fulfill the “all limitations” prong of a *prima facie* case of obviousness, as required by *In re Vaeck*.

To the extent that the Examiner is arguing that Swales inherently discloses the use of time slots (i.e., “communications between devices is limited defined periods, and that communication from an external device is only allowed within certain intervals”), the fact that a certain element might be present in the prior art is insufficient to establish the inherency of that element. *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993); *In re Oelrich*, 666 F.2d 578, 581-82 (CCPA 1981). “To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999); MPEP § 2112. “In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art.” *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (*emphasis in original*); MPEP § 2112. The fact that Swales uses a throttling technique to control non-priority communications traffic does not necessarily support the assertion that such a technique uses specific assignments to unused time slots, as recited in claim 1. The characterization of certain claim limitations or parameters as obvious does not make the claimed invention, considered as a whole, obvious. It is incumbent upon the Examiner to establish a factual basis to

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support the legal conclusion of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This burden can only be satisfied by an objective teaching in the prior art or by cogent reasoning that the knowledge is available to one of ordinary skill in the art. *See In re Lalu*, (747 F.2d 703, 223 U.S.P.Q. 1257 (Fed. Cir. 1984)). Furthermore, an Examiner may not rely on official notice, or judicial notice, or a mere statement of obviousness at the exact point where patentable novelty is argued, but must come forward with pertinent prior art. *See Ex parte Cady*, 148 U.S.P.Q. 162 (Bd. of App. 1965). Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. *In re Kotzab*, 55 U.S.P.Q.2d at 1316-1317 (*citing B.F. Goodrich Co. v. Aircraft Breaking Sys. Corp.*, 72 F.3d 1577, 1582, 37 U.S.P.Q.2d 1314, 1318 (Fed. Cir. 1996)); *see also* MPEP § 2142 (*quoting Ex parte Clapp*, 227 U.S.P.Q 972, 973 (B. Pat. App. & Inter. 1985)) (“To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.”). The Examiner has not provided any analysis or prior art that would reasonably support that the unused time slot assignment architecture recited in claim 1 would necessarily flow from the message rate limiting technique disclosed by Swales.

Since Swales does not disclose an architecture comprising one or several embedded local servers capable of responding to non-deterministic requests and, using for that purpose, time slots left available by the deterministic traffic of the industrial local area network for responding to non-deterministic requests without disturbing priority message traffic related to real time process control,

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Applicant believes that one of ordinary skill in the art would not have been motivated to modify Swales to use such an architecture with a time slot technique. *In re Dembiczak* and *In re Zurko* require the Examiner to provide particularized facts on the record as to why one of skill would be motivated to modify a reference. Without a motivation to modify or combine, a rejection based on a *prima facie* case of obviousness is improper. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998)). The Examiner must make specific factual findings with respect to the motivation to combine or modify references. *In re Lee*, 277 F.3d 1338, 1342-44 (Fed. Cir. 2002). Although the Examiner provides a terse analysis regarding unused time slots, it has been acknowledged that Swales lacks any teaching with respect to the use of unused time slots. Moreover, the Examiner has not pointed out any deficiencies in Swales that might motivate an artisan to modify Swales to use the time slot technique. For example, if Swales is adequate for the handling of both priority and non-priority communications, why would an artisan modify Swales to shift the non-priority communications to the unused time slots? No particularized facts on the record have been provided as to why an artisan would be motivated to modify Swales in the manner recited in claim 1. Applicant believes that the Examiner cannot fulfill the motivation prong of a *prima facie* case of obviousness, as required by *In re Dembiczak* and *In re Zurko*.

Based on the foregoing reasons, Applicant believes that Swales fails to disclose all of the claimed elements as arranged in claim 1. Therefore, Swales clearly cannot render the present invention obvious as recited in claim 1. Thus, Applicant believes that claim 1 is in condition for allowance, and further believes that claims 2 and 4-10 are allowable as well, at least by virtue of

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their dependency from claim 1. Applicant respectfully requests that the Examiner withdraw the §103(a) rejection of claims 1, 2 and 4-10.

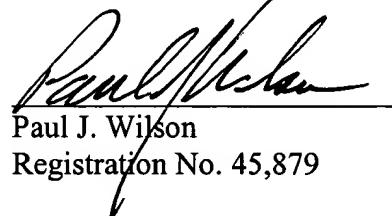
Independent claim 3 has similar recitations as claim 1, namely, the exchange of non-deterministic digitized information using available time slots provided over the site network by the deterministic interchange mode. Therefore, Applicant believes that claim 3 is allowable for the same reasons as claim 1, in that Swales does not teach the use of assigning non-deterministic digitized information to unused time slots in a deterministic network, and that an artisan would not have been motivated to modify Swales in that manner. Thus, Applicant believes that claim 3 is in condition for allowance, and further believes that claims 11-14 are allowable as well, at least by virtue of their dependency from claim 3. Applicant respectfully requests that the Examiner withdraw the § 103(a) rejection of claims 3 and 11-14.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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